

**Amendment and Response**

Serial No.: 10/643,748

Confirmation No.: 4133

Filed: 19 August 2003

For: DENTAL ARTICLE FORMS AND METHODS

Page 9 of 14

**Remarks**

The Office Action mailed 24 October 2007 has been received and reviewed. Claims 39, 45, 58, 65, and 66 having been amended, and claims 67 through 71 having been added, the pending claims are claims 39 and 42-71. Reconsideration and withdrawal of the rejections are respectfully requested.

**Double Patenting Rejection**

Claims 39 and 42-66 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-54, 56-73, 75, and 79-88 of copending Application No. 10/219,398 in view of Neustadter U.S. Patent No. 3,565,387. Upon an indication of otherwise allowable subject matter and in the event this rejection is maintained, Applicants will provide an appropriate response.

**The 35 U.S.C. §103 Rejections**

The Examiner rejected claims 39 and 42-44 under 35 U.S.C. §103(a) as being unpatentable over Simor (U.S. Patent No. 3,585,723) in view of Neustadter et al. (U.S. Patent No. 3,565,387), Ivanov et al. (U.S. Patent No. 4,113,499) and Wilson (U.S. Patent No. 5,487,663). The Examiner rejected claims 45, 46, 48-55, 58, and 60-66 under 35 U.S.C. §103(a) as being unpatentable over Simor (U.S. Patent No. 3,585,723) in view of Neustadter et al. (U.S. Patent No. 3,565,387) and Wilson (U.S. Patent No. 5,487,663). The Examiner rejected claims 47 and 59 under 35 U.S.C. §103(a) as being unpatentable over Simor (U.S. Patent No. 3,585,723) in view of Neustadter et al. (U.S. Patent No. 3,565,387) and Wilson (U.S. Patent No. 5,487,663) as applied to claim 45, and further in view of Ivanov et al. (U.S. Patent No. 4,113,499). The Examiner rejected claims 56 under 35 U.S.C. §103(a) as being unpatentable over Simor (U.S. Patent No. 3,585,723) in view of Neustadter et al. (U.S. Patent No. 3,565,387) and Wilson (U.S. Patent No. 5,487,663) as applied to claim 45, and further in view of Uthoff (U.S. Patent No. 5,102,332). The Examiner rejected claims 57 under 35 U.S.C. §103(a) as being

**Amendment and Response**

Serial No.: 10/643,748

Confirmation No.: 4133

Filed: 19 August 2003

For: **DENTAL ARTICLE FORMS AND METHODS**

Page 10 of 14

unpatentable over Simor (U.S. Patent No. 3,585,723) in view of Neustadter et al. (U.S. Patent No. 3,565,387) and Wilson (U.S. Patent No. 5,487,663) as applied to claim 45, and further in view of Kahn (U.S. Patent No. 3,949,476). These rejections are respectfully traversed; however, in the interest of expediting prosecution, each independent claim has been amended. Withdrawal of each of these rejections is respectfully requested.

Each independent claim has been amended to recite that the dental article form is reshaped while in the subject's mouth after filling the reservoir with the hardenable dental material. None of the cited documents teach or suggest this reshaping of the dental article form in the mouth after filling its reservoir with a hardenable dental material. As stated in Applicants' specification, "[t]he dental article form is sufficiently malleable in the oral environment such that the filled article form is easily customizable, which includes, for example, adjustment to width and marginal contacts of the crown form. This customization is done while the filled dental article form is seated on the prepared tooth stump, and while the hardenable dental material is still in the unhardened stage. The customization can be done by a variety of methods including applying pressure with fingers or an instrument of choice (e.g., hand operation of dental composite instrument) to provide optimum custom fit, including gingival, proximal, and occlusal fit." (Applicants' specification at page 13, lines 17-25).

In the case of a crown, the present invention provides a dental crown form having a reservoir filled with a material that will form the ultimate crown (after removal of the crown form). The crown form is then reshaped with the hardenable dental material in it while on a tooth stump, thereby causing the material in the reservoir to adopt the shape of the crown form. The hardenable dental material is at least partially hardened to form a dental crown, and then the crown form (used to form or mold the crown) is removed.

None of the cited references, used in any combination, teaches or suggests this reshaping step in the mouth after filling the reservoir. Not only do the combinations of documents lack the teaching of the desire to have a dental article form that can be reshaped in the mouth while a

**Amendment and Response**

Serial No.: 10/643,748

Confirmation No.: 4133

Filed: 19 August 2003

For: DENTAL ARTICLE FORMS AND METHODS

Page 11 of 14

hardenable material for forming an ultimate dental article is within the reservoir of the form, there is no teaching or suggestion of how this could be accomplished.

Simor does not teach a crown form or the reshaping thereof. Simor teaches reshaping a crown *per se* while dental cement is between the crown and the tooth stump (e.g., col. 6, lines 55-58 and col. 8, lines 65-71). This cement is not, however, a hardenable material that forms a dental article upon removal of a form that shapes the dental article, particularly (as recited in new claims 67 through 71) a dental article selected from the group consisting of a crown, an inlay, an onlay, a bridge, an orthodontic appliance, a maxillofacial prosthesis, and a tooth splint).

Although Neustadter et al. teach a dental pattern, e.g., a crown form, there is no reshaping of the pattern in the subject's mouth after filling the reservoir with a hardenable dental material that ultimately forms the dental article. The pattern is used in a casting process, which may involve the use of wax (with the wax being eventually burned out). Furthermore, as stated in Applicants' previous response, simple reference to polyvinyl acetate, polyethylene and copolymers thereof does not necessarily provide sufficient description for one of skill in the art to select a composition that is both self-supporting and malleable. Thus, Neustadter et al. do not provide an enabling disclosure for selection of a composition that is malleable and self-supporting.

The Examiner cited Wilson for a disclosure of removing the dental article form from the dental article. Wilson does not, however, teach that the dental article form is self-supporting and malleable. Nor does Wilson teach reshaping the dental article form in the subject's mouth. The reshaping discussed at column 4, lines 8-24, refers to reshaping the composite material remaining after removal of the crown form.

There is no logical reason why one of skill in the art would combine the teachings of these three documents as proposed in support of this rejection. Even if there were such a reason, the organic composition of Neustadter et al. would be used to make the crown of Simor, which is not a crown form that is removed to form the ultimate crown. Furthermore, even with Wilson combined with Simor and Neustadter et al., there is no suggestion of reshaping a dental article

**Amendment and Response**

Serial No.: 10/643,748

Confirmation No.: 4133

Filed: 19 August 2003

**For: DENTAL ARTICLE FORMS AND METHODS**

Page 12 of 14

form in the subject's mouth, particularly after filling the reservoir (of the dental article form) with the hardenable dental material that forms the ultimate dental article.

Furthermore, with respect to claims including a surfactant, although Ivanov et al. disclose a surfactant mixed in a disposable mold form, Ivanov et al. is directed to molds used in the foundry industry, a completely nonanalogous technology area, and used for a completely different purpose. There is no teaching or suggestion that such molds could be used in a dental method, or any reason to believe that the compositions of such molds would be suitable for modification to be used in a dental article form in a subject's mouth.

Finally, Uthoff and Kahn do not provide that which is missing from the other cited documents. As such, Applicants respectfully submit that each of the claims is not obvious. Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a).

It is submitted that the rejections may only be made by impermissible hindsight reconstruction, that is, by picking and choosing from each document that which supports these rejections. One cannot "simply [to] engage in a hindsight reconstruction of the claimed invention, using the Applicant's structure as a template and selecting elements from references to fill the gaps." *In re Gorman*, 933 F2d 982, 18 U.S.P.Q.2d 1885, 1888 (Fed. Cir. 1991).

As recently asserted in *Princeton Biochemicals, Inc. v. Beckman Coulter, Inc.* 411 F.3d 1332, 75 U.S.P.Q.2d 1051 (Fed. Cir. 2005), 35 U.S.C. §103 specifically requires an assessment of the claimed invention "as a whole." The "as a whole" assessment of the invention requires a showing that an artisan of ordinary skill in the art at the time of the invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would have selected the various elements from the cited references and combined them in the claimed manner. In other words, 35 U.S.C. §103 requires some suggestion or motivation, before the invention itself, to make the new combination. See *In re Rouffet*, 149 F.3d 1350, 1355-56, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998).

**Amendment and Response**

Page 13 of 14

Serial No.: 10/643,748

Confirmation No.: 4133

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**For: DENTAL ARTICLE FORMS AND METHODS**

In *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727; 167 L.Ed.2d 705; 82 USPQ2d (BNA) 1385 (2007), the U.S. Supreme Court has acknowledged the utility of this "teaching, suggestion, motivation" inquiry when determining the obviousness of an invention by recognizing that the inquiry arose from "helpful insight" of the Court of Customs and Patent Appeals. The inquiry arose as a guard against a finding of obviousness where an examiner or a court was able to find all of the elements of an invention in the prior art, but without any suggestion or motivation to combine the prior art references that described the elements in question. The Supreme Court reiterated that "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." 167 L.Ed.2d at 14.

Furthermore, this "as a whole" instruction in 35 U.S. §103 prevents evaluation of the invention part by part, aided by the template of Applicants' disclosure. Without this important requirement, an obviousness assessment might reduce an invention into its component parts, then find a reference corresponding to each component. This type of assessment would import hindsight into the obviousness determination by using the invention as a roadmap to find its prior art components. The U.S. Supreme Court cautioned against such analysis in *KSR*, stating, "A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." (167 L.Ed.2d at 725, citing *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966). The Court also warned against a "temptation to read into the prior art the teachings of the invention in issue" and instructed courts to "guard against slipping into the use of hindsight" (383 U.S., at 36, quoting *Monroe Auto Equipment Co. v. Heckthorn Mfg. & Supply Co.*, 332 F. 2d 406, 412 (CA6 1964))).

Applicants respectfully submit that these warnings have not been heeded and the rejections can only be supported by the use of impermissible hindsight reconstruction.

**Amendment and Response**

Serial No.: 10/643,748

Confirmation No.: 4133

Filed: 19 August 2003

For: DENTAL ARTICLE FORMS AND METHODS

Page 14 of 14

**Summary**

It is respectfully submitted that the pending claims 39 and 42-71 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted

By

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**CERTIFICATE UNDER 37 CFR §1.8:**

The undersigned hereby certifies that the Transmittal Letter and the paper(s), as described hereinabove, are being transmitted by facsimile in accordance with 37 CFR §1.6(d) to the Patent and Trademark Office, addressed to Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 24<sup>th</sup> day of January, 2008, at 4:18 pm (Central Time).

By: Dani Meroz  
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